

Profile Milling Fixture for Recoil Cylinder Liner. — An unusual type of milling fixture, and one which proved very effective for a contour milling operation on the bronze liners of recoil cylinders, is illustrated in Figs. 21 and 22. The former illustration shows the fixture set up on a milling machine. This fixture has a master sleeve or former *A* in which there is an opening corresponding to the one to be milled in the recoil cylinder sleeve *F*. A roller *C*, mounted upon a bracket secured to the front of the machine, engages the opening in the former. The

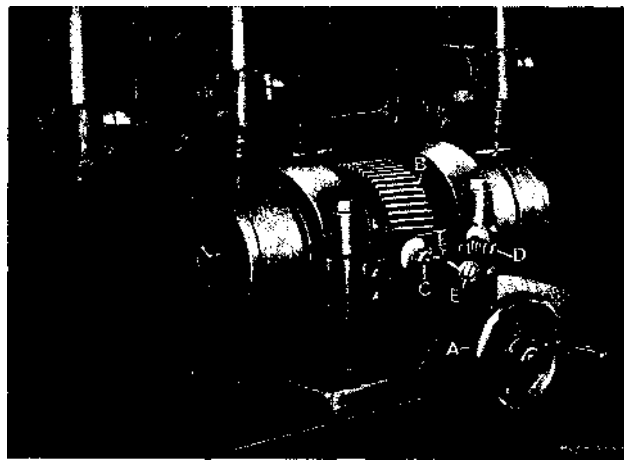


Fig. 23. Fixture for Routing Oil-grooves on Two Bushings at One Time

master former and the recoil liner are caused to turn in unison by a link *D* which, as clearly shown by the end view, Fig. 22, is connected to the ends of extension arms on the former and work-holding shafts. When milling the lower edge of the opening, which is the operation shown in Fig. 21, the weight *E* is swung over to the right, so that it tends to hold the former firmly in contact with roller *C*. When the machine table is fed in a lengthwise direction for milling this edge, the master former and liner do not have any turning movement, since the lower edge of the opening is straight. For milling the upper or curved side, weight *E* is swung over to the left, and then the curved part of the opening in the master former is held securely